



U.S. - China Water Resources Management Program

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The background of the slide is a photograph of a natural landscape. In the foreground, there is a field of tall, dry, golden-brown grass. Beyond the grass, a calm body of water, possibly a lake or a wide river, stretches across the middle ground. The far bank of the water is lined with a dense row of green trees. The sky above is a deep blue, filled with soft, white, and light blue clouds. The overall lighting suggests a bright, sunny day.

US/China Water Resources Program Goals

- Sponsored by U.S. China Forum on Environment and Development
 - Chaired by VP Gore, Premier Zhu Rongji
- Develop a coordinated, sustainable water resources management program between the US and PRC
- Coordinate identification of common problems and develop scientific, technological, and management solutions

The background of the slide is a scenic landscape. It features a body of water in the middle ground, with a grassy field in the foreground and a line of trees in the distance. The sky is filled with large, white, fluffy clouds. The overall tone is natural and serene.

US/China Water Resources Management Program - Goals

(cont'd)

- Coordinate joint involvement of private sector and world financial community to transfer technical approaches to application
- Develop workshops to further develop water resources management science and technology and green chemistry approaches to avoid pollution



US/China Water Resources Management Workshop

- Held in Tucson, AZ, April 19-22, 1999
- 160 attendees, 53 representatives from the People's Republic of China
- Sponsored by the White House Office of Science and Technology representing U.S. federal agencies
- Ministry of Science and Technology and Ministry of Water Resources leading Chinese agencies

The background of the slide is a scenic landscape. It features a calm body of water in the middle ground, reflecting the sky. The foreground is filled with tall, dry, golden-brown grass. The sky is a deep blue with scattered white and grey clouds. The overall mood is serene and natural.

Workshop Purpose

- Summarized in opening remarks by Senator Max Baucus of Montana
- Compare Sino/U.S. approaches to water resource management
- Identify and prioritize key areas where ongoing cooperation could inspire positive changes in water resource management in the US and China, and ultimately, globally

Workshop Layout

- Focus on water resource and management problems in context of example US and Chinese River Basins:
 - Huang He/Rio Grande
 - Yangtze/Mississippi

Breakout Sessions

- US/PRC scientists and agency representatives agreed to four areas for discussion:
- *Agriculture and Forestry*
- *Ecological Requirements*
- *Domestic/Industrial Water Issues*
- *Flood and Drought Planning and Mitigation*



Breakout Sessions (cont'd)

- Breakout Sessions were co-chaired and designed by US and PRC participants
- Topics for discussion agreed upon
- Presentations shared by US and PRC participants
- Summary presentations prepared by co-chairs for concluding plenary session



Summary Presentations

Agriculture/Forestry

Priority areas for further collaboration include:

- * Soil and water conservation technology
- * Irrigation management and systems
- * Regional watershed management for production and conservation
- * Dryland farming management and technology
- * Water harvesting methods
- * Watershed modeling technology/data sharing
- * Protective tillage practices
- * Forest conservation practices

Summary Presentations

Ecological Requirements

Priority areas for further collaboration include:

- * Techniques and ideas underlying ecological inventories
- * Paired basin watershed research and monitoring
- * Exchange views on ecological assessment objectives and applications
- * Desertification assessment with development of biological and engineering solutions
- * Water and soil conservation cooperation (remote sensing, model creation, long term monitoring approaches and training/exchange of experts)



Summary Presentations

Ecological Requirements (cont'd)

* Wetland collaboration

- (this might entail establishing paired sites for landuse/landcover mapping of managed and undisturbed areas, and data collection for GIS
- Remote sensing and monitoring, as well as development of decision support models for managers

The background of the slide is a photograph of a calm body of water, likely a lake or reservoir, under a vast, blue sky filled with soft, white clouds. The water reflects the sky, and the foreground shows some dry, brownish vegetation along the shoreline.

Summary Presentation

Industrial/Domestic Water Use

Priority areas for further collaboration include:

- * Participate in Green Chemistry Initiative and activities
- * Industry/Public education/outreach
- * Develop research programs on alternative energy and treatment technology
- * Develop models to estimate load allocation and calibration
- * Training (GIS-related, other)
- * FIELDS/GIS workshops
- * Coordinate with PRC agencies determination of high risk areas for human health aspects
- * Use GIS to assess global climate change variability
- * Create linkages between US and PRC companies working on design for environment



Summary Presentations

Flood/Drought Planning/Mitigation

Priority areas for further collaboration include:

- * Training PRC professionals in management of flood detention areas; river basin management, water transfers and water management policies
- * US providing consultant services to PRC on study of water shortages in the North and drying of Huang He
- * Development of state-of-the-art flood control-dispatch system (flood information collection system; computer network for data transmission; communication system; data and information processing and prediction)
- * Use of roller compacted concrete for flood control structures

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Recommendations

- Establish a Water Resources Working Group under the Joint Commission Meeting of the U.S./China Science and Technology Agreement
- Develop and manage water resources
- Create economic cooperation opportunities

Recommendations (cont'd)

- Establish Specific Training Activities

1. Training Program on Water-Saving Irrigation and Rehabilitation of Large and Medium Irrigation Districts - Bureau of Reclamation already discussing with MWR, support from USDA, DOE, state and local water districts.
2. Training Program on Management of Flood Detention Areas and Flood Insurance - Corps of Engineers, support from Office of Foreign Disaster Assistance (USAID), state and local flood control districts.
3. Training Program on River Basin Management - Tennessee Valley Authority under existing agreement, support from USGS, USDA, BuRec, NOAA, Corps of Engineers
4. Training Program on Inter-basin Water Transfer Projects - Bureau of Reclamation already discussing with MWR, support from Army Corps, OSTP
5. Training Program on Wastewater Treatment and Seawater Desalination - EPA, support from BuRec, Commerce, DOE and industry
6. Training Program on Water Resources Management and Water Investment Policy - Office of Science and Technology Policy, support from multiple agencies, Army Corps, Academic institutions



Summary and Next Steps

- Develop schedule and delivery for training workshops including training materials
- Establish a regular working group to facilitate communications
- Future workshops on specific topics
- Enhance commercial opportunities

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U.S. - China Water Resources Management Program Website:

<http://www.lanl.gov/chinawater>

Contains program information and the
proceedings of the Tucson Workshop